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AUTHOR Huba, Mary E.; And Others
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ABSTRACT

A study was conducted to determine if knowledge of the purposes of written language facilitated reading achievement in preschool children. The study also compared the performance of boys and girls to determine if boys' generally poorer reading abilities could be related to differences in print awareness. Scores from the comprehension subtest of the Iowa Test of Basic Skills (ITBS) were obtained for 38 children whose explicit understanding of the purposes of print had been assessed four to six years earlier during their preschool years. In addition, 142 male and 123 female preschool children were compared in terms of their understanding of the purposes of print. Results showed that scores on the knowledge of purposes measure were significantly related to ITBS grade equivalent scores for each age group studied. In terms of sex differences, no statistical differences were found, although females outperformed males in each age group. The findings gave indirect support to the notion that knowledge of purposes of print may facilitate reading achievement. (FL)

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Print Awareness in Prereaders and Subsequent Reading Achievement

Mary E. Huba
Iowa State University

Susan S. Robinson
Iowa State University

Susan Kontos
Purdue University

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Abstract

Iowa Test of Basic Skills reading comprehension subtest scores were obtained for thirty-eight children whose explicit understanding of the purposes of print had been assessed four to six years earlier during their preschool years. Correlations for three preschool age-groups were uniformly high (average = .71). In addition, 142 male and 123 female preschoolers were compared in terms of their understanding of the purposes of print. No statistical differences were found, although females outperformed males in each of the three age-groups examined. Findings give indirect support to the notion that knowledge of the purposes of print may facilitate reading achievment. Results are discussed in terms of previous research.

Print Awareness in Prereaders and Subsequent Reading Achievement

During the past several years we have been interested in studying what children know about the purposes of reading and writing before they are exposed to formal reading instruction in school. In our original attempts to assess this understanding we tried to avoid the occurrence of two types of responses from our subjects. First, we wished to minimize the effect of a subject's verbal fluency on our interpretation of that child's results; that is, we didn't want to conclude that subjects with less elaborate responses to our inquiries necessarily understood less about reading's purposes. Second, we tried to eliminate having subjects provide what might be called simple associative responses to familiar reading- related terms, rather than responses which would indicate their understanding of concepts.

As a result then of these two concerns, we designed a task in which, for the most part, children respond to questions by pointing, and no mention is made of terms such as read, write, letter, etc. Since we wished to focus exclusively on a child's explicit understanding of the purposes of print, we developed questions assessing these four notions: language has a written symbol system, people write down their language for efficient communication, reading is a process by which one deciphers written language to obtain meaning, and written language can represent in one-to-one correspondence the words uttered by a speaker (Huba & Kontos, 1985).

In our original assessments of preschoolers, we found what other researchers (Downing, 1970, 1972; Hiebert, 1981, 1983; Reid, 1966) studying preschool print awareness have found, namely that knowledge increases with age, and that by the time a child is ready for kindergarten, he or she has not necessarily achieved complete understanding of the concepts we presented. Of course, the really interesting question lurking behind all of this research is whether or not preschool print awareness is related to subsequent success in formal reading instruction. Several authors such as Goodman and Goodman (1979), Smith (1976), and Downing (1979) have argued that it should be.

Downing (1979) has perhaps expressed it best in his Cognitive Clarity Theory in which he likens learning to read to the acquisition of other psychological skills. He calls upon Fitts and Posner's (1967) formulation of the three stages involved in learning a psychological skill: first, the cognitive phase in which the learner attends to the functions of the tasks s/he must undertake, ascertaining what behaviors are relevant and irrelevant to performance; second, the practice-until-mastery phase; and third the overlearning or automaticity phase. Downing (1979) views understanding of the meaning-bearing function of reading and writing, the construct which we are attempting to measure in our research, as particularly relevant for progress in phase one. In fact, he points out that the 'cognitive confusion' (Vernon, 1971) typically found in disabled readers is due to the fact that educators have usually eclipsed this phase in instruction. Thus, the argument presented by

Downing and others is that those who understand the purposes of written language are more likely to be able to make sense of the details about reading presented in instruction. The logic of this argument is compelling and attractive, and in our research we have attempted to determine whether or not empirical data would corroborate this essentially reasonable position.

We have reported in the past what our original research seemed to say about the relationship between understanding the purposes of print and reading achievement. That is, on the task which we designed for preschoolers, two groups of second grade poor readers (one a Title 1 group and the other a middle class group with at least average intelligence) did significantly worse than second grade normal readers. This is not to say that they were all terrible at the task, but rather to point out that most of the poor reading children who had been in school for three years and receiving reading instruction for at least two years had not reached ceiling on this task, whereas most normal readers had. These data, then, are not incompatible with the notion that children who understand the purposes of print will learn to read better.

On the other hand, the findings of three other studies do not support a relationship between knowledge of purposes and reading achievement. Kontos and Mackley (1985) assessed metalinguistic knowledge and reading readiness skills in a group of children several times during kindergarten and first grade. The California Test of Basic Skills was administered at the end of first grade. They found that knowledge of the purposes of print was not a significant predictor of skill acquisition at any point in the study. Ayers and Downing (1982) gave a group-administered test of understanding literacy functions to several groups of kindergarten children and a reading achievement test to the same subjects one year later. Correlations were uniformly low. Finally, Sue Robinson and I (Huba & Robinson, 1986) administered our knowledge of purposes measure to a group of 4 and 5 year old preschoolers attending a Montessori preschool program, some of whom were early readers. Results showed that knowledge of reading and reading ability was unrelated to knowledge of purposes, but highly related to language development and to writing ability. Among both readers and nonreaders knowledge of purposes varied widely with some readers exhibiting minimal knowledge and some non-readers showing rather complete knowledge.

In the current study we wished to pursue this issue further. We decided to collect follow-up information about the reading achievement on the Iowa Test of Basic Skills (ITBS) of the preschool students who had participated in our initial research in Iowa. We reasoned that if preschool knowledge of purposes facilitated reading achievement, we might observe a correlation between the two sets of scores. On the other hand, we were aware that observing a correlation was unlikely, even if a relationship existed, simply because for one thing there was a four to six year time interval between the administration of the two measures, and for another, they differed so dramatically in content.

Another way in which we attempted to examine the relationship between preschool print awareness and reading achievement was to compare the performance of boys and girls in both our original data sets and those which we have subsequently collected for other studies. Since boys are disproportionately represented among groups of school-age poor readers, a relationship between preschool print awareness and subsequent reading achievement would be indirectly supported by observing a difference favoring girls on knowledge of the purposes of print.

Method

Subjects. In the studies reported by Huba and Kontos (1985) there were 137 three-, four-, and five-year-olds who participated between 1979 and 1981 in Iowa and Colorado. Target subjects for the longitudinal comparison were the 38 subjects from this original sample who had been tested in Ames, Iowa and were identified as still living in the area. Usable data were obtained for 35 of those whose parents gave permission.

Subjects for the comparison of males and females were the 137 subjects referred to above, as well as the 128 subjects who have participated in subsequent studies in Iowa.

Analysis. For the longitudinal comparison, correlations were computed between subjects' scores on the knowledge of purposes measure and their 1984-85 ITBS grade equivalent scores on the Reading Comprehension subtest. Most children took the ITBS during the month of January, and the scores of those who did not were converted to a January equivalent. Correlations were computed separately for those who were 3, 4, or 5 at the time of taking the purposes measure. Of the 10 three-year-olds, 3 were in Grade 2 and 7 were in Grade 3. Of the 14 four-year-olds, 4 were in Grade 2, 7 in Grade 3, and 3 in Grade 4. Of the 11 five-year-olds, 10 were in grade 4 and 1 in Grade 5. Thus, in addition, for each age group a correlation between the two measures was computed for the largest cluster in the same grade.

Sex differences were evaluated using the independent t-test. Comparisons were made separately for each age group since knowledge of purposes is known to increase with age, and the number of males and females was not the same for each age group. Data were analyzed first with only subjects in the original sample, and subsequently with all subjects combined.

Results and Discussion

As shown in Table 1, scores on the knowledge of purposes measure were significantly related to ITBS grade equivalent scores for each age group in each analysis with the exception of three year olds in the second analysis. In that group there were only 7 subjects, and for a sample of that size, a correlation of .68 is not statistically different from zero. These uniformly high correlations were somewhat unexpected for reasons discussed above. Although it is recognized that the magnitude of the correlations may not have been as high with

more subjects, the consistency of the size of the correlation across age groups seems to indicate that some relationship is present, or at least, that the issue is worth examining in subsequent research.

In terms of the comparison between males and females on the knowledge of purposes measure (Tables 2 and 3), females performed better than males in each age group, although the difference was statistically significant only for 4-year-olds in the original sample. Despite a lack of significant differences, the fact that the female average was always higher is noteworthy in that it indicates that the differences between boys and girls represent something other than random variation. Examination of frequency distributions revealed that the distributions were generally similar in range and shape for males and females at each age.

These findings give indirect support to the notion that knowledge of the purposes of written language may facilitate reading achievement, and they are compatible with the results of the study of second grade normal and poor readers discussed above. They are at variance, however, with the findings of other studies which have found no relationship between knowledge of purposes and reading achievement.

One way in which the two sets of studies differ is that in the former, reading achievement was measured at the end of Grade 2 or beyond, whereas in the latter, achievement was measured sometime between preschool and first grade. This observation may indicate that it is possible for some children with little knowledge of the functions of print to pass successfully through the initial stages of reading instruction in which, according to Chall (1979), the focus in usually on the presentation of discrete reading-related skills (visual discrimination, letter-sound correspondences, blending, etc.). In other words, it may be enough if children are cognitively 'clear' about the immediate purpose of each of these tasks, even though they have failed to conceptualize the overall communicative function of print. At later points in instruction when interpretation and comprehension of written text is the focus, this primary concept about print would be essential for further progress. In any event, the findings of this study suggest that further research in this area is needed and that empirical data must play a role in expanding and clarifying current, quite logical, formulations about the facilitating effect in reading acquisition of knowledge of the functions of print.

References

Ayers, D. & Downing, J. (1982). Testing children's concepts of reading. Educational Research, 24(4), 277-283.

Chall, J. S. (1979). The great debate: Ten years later, with a modest proposal for reading stages. In L. B. Resnick & P. A. Weaver (Eds.), Theory and practice of early reading: Vol. 1. Hillsdale, NJ: Erlbaum Associates.

Downing, J. (1970). Children's concepts of language in learning to read. Educational Research, 12, 106-112.

Downing, J. (1972). Children's developing concepts of spoken and written language. Journal of Reading Behavior, 4(1), 1-19.

Downing, J. (1979). Reading and reasoning. Bath: W. & R. Chambers Ltd.

Fitts, P. M. & Posner, M. I. (1967). Human performance. Belmont, CA: Brooks-Cole.

Goodman, K. S. & Goodman, Y. M. (1979). Learning to read is natural. In L. B. Resnick & P. A. Weaver (Eds.), Theory and practice of early reading: Vol. 1. Hillsdale, NJ: Lawrence Erlbaum Associates.

Hiebert, E. (1981). Developmental patterns and interrelationships of preschool children's print awareness. Reading Research Quarterly, 16, 236-260.

Hiebert, E. (1983). Knowing about reading before reading: Preschool children's concepts of reading. Reading Psychology, 4, 253-260.

Huba, M. E. & Kontos, S. (1985). Measuring print awareness in young children. Journal of Educational Research, 78(5), 272-279.

Huba, M. E. & Robinson, S. S. (1986). Examining the correlates of reading ability among preschoolers. Paper presented at the annual meeting of the Iowa Educational Research and Evaluation Association, Ames, Iowa.

Kontos, S. & Mackley, H. (1985). Development and interrelationships of reading knowledge and skills during kindergarten and first grade. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Reid, J. F. (1966). Learning to think about reading. Educational Research, 9, 56-62.

Smith, F. (1976). Learning to read by reading. Language Arts, 53, 297-299.

Vernon, M. D. (1971). Reading and its difficulties. London: Cambridge University Press.

Table 1

Correlations between Print Awareness Scores and ITBS Reading Comprehension Grade Equivalent Scores for Three Age Groups

		Age Group		
	Statistic	3	4	5
All	r	.67*	.62*	.69*
	p^a	(.05)	(.02)	(.02)
	n	10	14	11
Largest Cluster in Same Grade	r	.68	.83*	.79**
	p^a	(.14)	(.02)	(.007)
	n	7	7	10

[a] two-tailed probability

*$p \leq .05$ **$p \leq .01$

Table 2

Average Print Awareness Scores in Original Samples

Age Group	Statistic	Males	Females	t
3	M	3.80	4.53	- .88
	SD	2.29	2.62	
	n	20	15	
4	M	6.41	8.78	-3.12**
	SD	2.68	2.70	
	n	27	23	
5	M	9.64	11.27	-1.62
	SD	4.11	3.14	
	n	22	30	

**$p \leq .01$

Table 3

Average Print Awareness Scores in Original and Subsequent Data Sets Combined

Age Group	Statistic	Males	Females	t
3	M	4.26	4.67	- .57
	SD	2.56	2.71	
	n	34	24	
4	M	7.18	8.19	-1.73
	SD	3.16	3.28	
	n	71	54	
5	M	10.24	10.84	- .78
	SD	3.55	3.38	
	n	37	45	